REMARKS

This Preliminary Amendment is being filed in conjunction with an RCE filing. This RCE filing follows upon the filing of a Notice of Appeal (on November 22, 2005) but precedes the filing of an Appeal Brief. This RCE and Preliminary Amendment are also responsive to the Final Office Action of May 24, 2005. A one month extension of time is included herewith to bring the pendency period up to March 22, 2006.

This Preliminary Amendment includes amendments to all independent claims 12, 27, 30, 32, and 33. Newly added independent claims 46, 47, and 48 represent objected to/allowable subject matter claims 19, 20 and 21 (as presented in last Amendment) rewritten into independent form.

As seen from the Preliminary Amendment accompanying this RCE filing, independent claims (claims 12, 27, 30, 32, and 33) are being amended to define more clearly the constructional features of the device which result in the formation of the magnetic fields which are responsible for the operation of the device.

The claims now refer to a plurality of passage means for the fluid and state that each passage means extends between respective opposed recesses on the first and second plates. The claims now also refer to a plurality of regions of magnetic attraction to which ferromagnetic material is attracted and retained. Those plurality of regions of magnetic attraction are described as being spaced apart around the periphery of the plates. The claims now state that each region of magnetic attraction extends between opposed pole pieces and furthermore states that adjacent regions of magnetic attraction are separated by one of the plurality of passage means.

The above features are respectfully submitted by Applicant to even more clearly distinguish the invention from Frei. In particular, Frei does not disclose regions of magnetic attraction extending between pole pieces, and wherein adjacent regions of magnetic attraction are separated by passage means extending between respective opposed recesses of facing plates. Indeed, Frei specifically states (column 1, lines 48 to 55) that "in the operation of the device... the liquid coming through the port 3... emerges through the screens 6 and 7 ...". The passage at column 2, lines 3 to 7 goes on to say that

"the magnetic material in the fluid adheres to ... the wires of the screens 6 and 7 which are also magnetized by their engagement with the peripheries of the baffle plates".

Therefore, it is clear that in Frei the whole of the screen is magnetized by contact with the magnetized baffle plates. Further reference is made to the passage in column 2, lines 8 to 16 which makes it clear that when it is desired to clean the filer "...since the parts become demagnetized as soon as the magnets 9 are removed, it is a simple matter to wipe the deposited ferrous material therefrom...".

Therefore, Frei does not disclose a plurality of regions of magnetic attraction, each of which extends between opposed pole pieces and in respect of which the adjacent regions of magnetic attraction are separated by one of the passage means.

Indeed, it is the features which now appear in the independent claims of the present application which more clearly provide the advantages over the prior art. In particular, by having a plurality of passage means, between which are disposed regions of magnetic attraction which are spaced apart around the periphery of the plates, contaminant is removed from the fluid flow and is not exposed to potential reintroduction to the fluid. This is clearly not the case in the Frei design, which merely comprises a conventional filter whose filtering properties with regard to ferromagnetic material are enhanced by magnetizing the filter screens.

Moreover, in the present invention Applicant notes that there is virtually no radial flow of fluid or contaminant, nor indeed is it intended that there should be any radial flow. By providing a series of through passages, on either side of which are regions of magnetic attraction, it is possible to have an entirely longitudinal flow through of fluid, in contrast to Frei where it is **essential** for the fluid to flow radially in order for it to be filtered conventionally. However, since the filtering occurs over the whole of the surface area of the mesh or gauze, the resistance to fluid flow increases as contaminant is retained on the gauze. In addition, the resistance to fluid flow created by contaminant collected on the magnetized screen will also tend to wash off or dislodge particles of contaminant which can thereby be reintroduced to the fluid.

In the present invention, by having a longitudinal flow of fluid through the device and by having regions of magnetic attraction arranged either side of the longitudinal flow passages, once contaminant is removed from the flow of fluid it does not inhibit the

further flow through of fluid and furthermore the likelihood of re-introduction of collected contaminants into the fluid flow is greatly reduced or even eliminated. Thus, the present invention does not inhibit at all the flow through of fluid, even when contaminant has been removed from the fluid itself.

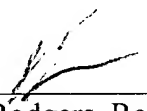
In addition, attached is a copy of a signed witness statement **[Attachment A]** which was submitted in the corresponding European patent application 96 925 034.9, which was granted as European Patent EP 0 840 649B1. Although the claim wording is not specifically the same between the present case and the EPO claims to which the witness statement is directed, it is believed that the technical discussion contained in the witness statement further illustrates the distinctions noted above between Frei and the present invention.

In addition, for the Examiners additional information, reference is made to **[Attachment B]** which includes pages from www.magnom.com of the Applicant/Assignee which illustrates various embodiments of magnetic filtration devices in accordance with the present invention. The enclosed pages are from the "How It Works" and "Awards" drop down categories found under the heading "Technology" found on the home page. A review of the enclosed "How It Works" photo shows trapped material within regions of magnetic attraction between opposed pole pieces and clear passage means there between which is illustrated of the above described advantages made possible under the present invention.

If any fees are due in this filing, please charge the fees to Deposit Account No. 02-4300. If an extension of time is necessary and not included herewith, such an extension is requested. The extension fee should be charged to Deposit Account No. 02-4300.

Respectfully submitted,

SMITH, GAMBRELL & RUSSELL, LLP

By: 

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March 22, 2006

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I, Philip J Grundy, am a Professor in Materials Physics in the Joule Physics Laboratory at the University of Salford (England) with thirty years experience in magnetics and magnetic materials research and over one hundred and thirty publications in international scientific journals.

I have been approached by John Marlowe with a view to commenting on Patent Application No. 96 925 034.0-2316, in particular, the inventive step of the present claim 1 over the prior art.

This I do now with the following comments and observations.

I have read the entire specification of the above patent application. New claim 1 states that there is an "interaction" between the magnetic fields of facing pole piece pairs (11, 12) as well as between radially alternate collecting regions (14). This "interaction" is implicit from the description (page 4 lines 24 to 28) as this is the only means of creating, inside regions (14), the "*magnetic fields generated therein..*" It is only through such North- South- pole interaction between the pole piece pairs (11, 12) that the magnetic field gradients can be strong enough to enable magnetisable particles to be retained in the locations specified (regions 14). In addition, the option of curving pole pieces towards each other further supports the implicit disclosure of the presence in regions (14) of the magnetic field interaction/ attraction between facing pole pieces.

In Frei's device, neither from the description nor the drawings, is there is any such interaction between the pairs of plates, as by doing so, this would detract from the magnetic field strength available to the surfaces to be magnetised. As the fields, in this case, are localised merely to the individual plates (where there is no interaction between fields of opposing plates) (Frei fig.1 baffle plates (8)), rather than extended to a third dimension in the axial plane (as evident in Marlowe (regions 14)), particles would collect preferentially on the available larger expanse of surface area on each plate and because of only localised and relatively weak magnetic fields, such particles would be difficult to retain and would thus be prone to wash off in the course of disturbance caused by fluid flow.

In Marlowe's device, by virtue of the portions of the plates either side of each recess (7) being of like polarity (p 5 line 2), a further interaction between the adjacent regions of attraction is generated in the channels formed by facing recess pairs (7, 8). This again is implicit from the description (p.5 lines 1 to 3) because the path of fluid flow i.e. the channels, are spaces from which ferromagnetic material is diverted – or magnetically repulsed. This influence is directly attributable to, and possible only through, the interaction between the radially adjacent regions (14) of magnetic attraction.

As Frei's device does not have radially adjacent regions of magnetic attraction, the magnetic interaction between these adjacent regions cannot be present. As a consequence of this, it is not possible to attract and retain particles.

The distribution of axial attractive fields (in regions 14) that alternate with adjacent radial repulsive fields (in channels) around Marlowe's device, thus inherently create the "orthogonally interacting magnetic fields" mentioned in claim 2. As these interactions are inherently simultaneous, collection and retention are enhanced without the need (where particle wash off from a collection surface is a likelihood) for a secondary particle trapping mechanism such as an outer mesh or screen at the outlet of the device.

Such orthogonally interacting magnetic fields are not present in Frei's arrangement.

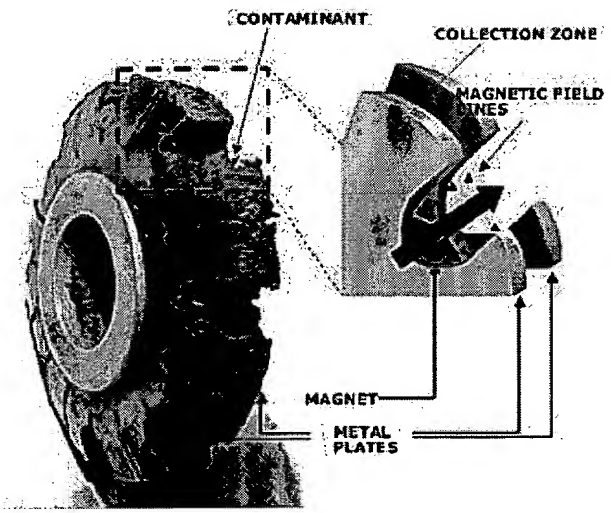
To address the mention in Marlowe's new claim 1 of "outlet means" from the device, clearly, the recesses (8) in the second plate are the exit means from the device described in claim 1. In FREI's device, clearly, fluid does not exit the device through the "serrations or notches (22)" (Frei p1 col 2; lines 43-45) in the baffle plates (8) (Frei fig.1). It is compelled to do so via the screens (6, 7) (Frei fig.1) present, in order to catch particles washed off the plates due to turbulence as well as those particles, not influenced in the first instance, on account of the limited localised fields on the plates. As such, material thus disadvantageously collects directly on the exit means (6, 7) of fluid from the device and builds up a gradual obstruction to fluid flow. Marlowe's device offers a great technical advantage in that it discourages particles from accruing at and thereby obstructing the exit points (8) of fluid from the device. The regions (14) between the pole pieces (11, 12) to which particles are preferentially attracted are shielded from fluid flow and turbulence and thus, importantly, facilitate their retention there.

Frei's assembly of magnet and plates, on its own, is not able to retain particles.

Pictures & images showing where the particles collect in Marlowe's device (provided to me in addition to the patent specifications) also demonstrate the strength and distribution of the magnetic field gradients inherent in Marlowe's arrangement.

11/12/07

THE MAGNOM : HOW IT WORKS



The Magnom has wide flow channels that allow the process fluid to pass with minimal pressure drop. As the fluid flows through the Magnom's field effect areas, ferrous and non-ferrous contaminants are drawn into special collection zones. These zones hold significantly more contaminant than a conventional filter - without obstructing fluid flow or risking "wash-off". Therefore, the Magnom can operate for very long periods without service and - when contaminants need to be removed - is easily cleaned and re-used.

MAGNOM LINKS

- HOW IT WORKS
- ANIMATION
- BENEFITS
- HOW TO CLEAN I
- HISTORY
- INTELLECTUAL PROPERTY
- AWARDS
- FAQ

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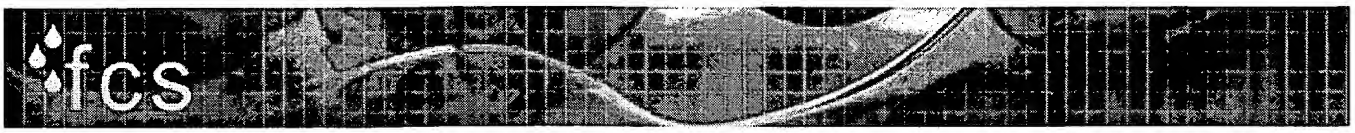
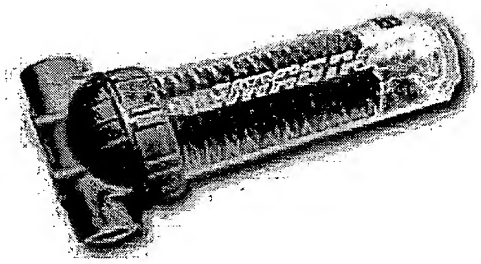
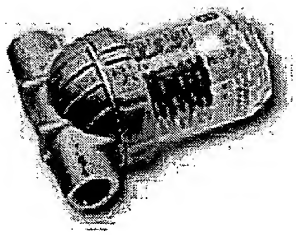


THE MAGNOM : AWARDS





- The Magnom™ was designated a Millennium Product by the Design Council and exhibited in the Millennium Dome in 2000
- The Magnom™ received second prize in the National Invention of the Year Award from the Institute of Patentees and Inventors in 2001
- The Magnom™ won the Merseyside Innovation Award in 2001
- The Magnom™ won the National Business Environment Award sponsored by the Royal Bank of Scotland in 2001

MAGNOM LINKS

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